

AMENDMENTS TO THE CLAIMS

1-10. (Canceled)

11. (Currently amended) An optical bio-disc, comprising:

a rotatable substrate ~~having encoded information associated therewith, the encoded information being located on the bio-disc and configured so as to be readable by a disc drive assembly to control rotation of the disc;~~

an antechamber associated with the substrate;

a separation chamber associated with the substrate, the separation chamber in fluid communication with the antechamber; ~~and configured such that a first portion of the separation chamber is closer to the antechamber than a second portion of the separation chamber;~~

a fluid outlet port located ~~between the first and second portions of~~ on the separation chamber at a position selected to permit outward transmission therethrough of at least a portion of a liquid-first component of a ~~particulate~~ suspension when the suspension is contained in the separation chamber and when the substrate is rotated ~~in response to the encoded information~~, while substantially preventing outward transmission therethrough of a ~~particulate matter~~ second component of the suspension;

a metering chamber associated with the substrate, the metering chamber in fluid communication with the fluid outlet port of the separation chamber so as to receive the liquid-first component of the suspension that is transmitted through the fluid outlet port and so as to retain within said metering chamber a controlled amount of said first component after termination of flow from the separation chamber through the first outlet port; and

an excess fluid outlet port connected to the metering chamber in a configuration such that the portion of the received first component that exceeds the controlled amount is delivered through the metering chamber and outward therefrom through the excess fluid outlet port; and

an assay zone associated with the substrate, the assay zone in fluid communication with the metering chamber and configured so that when the ~~particulate suspension including the particulate matter component and the liquid component~~ is deposited into the

~~antechamber, rotating the substrate~~ substrate is rotated, in response to the encoded information delivers a ~~the controlled metered~~ amount of the ~~liquid-first~~ component is delivered from the metering chamber to the assay zone.

12. (Currently amended) An optical bio-disc, comprising:

~~a substrate having a center and an outer edge, and having encoded information associated therewith, the encoded information being located on the bio disc and configured so as to be readable by a disc drive assembly to control rotation of the disc;~~

an antechamber associated with the substrate;

a separation ~~tube~~ chamber associated with the substrate, the separation ~~tube~~ chamber in fluid communication with the antechamber; ~~and configured such that a first portion of the separation tube is closer to the antechamber than a second portion of the separation tube;~~

a fluid outlet port located ~~between the first and second portions of~~ on the separation ~~tube~~ chamber at a position selected to permit outward transmission therethrough of at least a portion of a liquid-first component of a ~~particulate~~ suspension when the suspension is contained in the separation ~~tube~~ chamber and when the substrate is rotated ~~in response to the encoded information~~, while substantially preventing outward transmission therethrough of a ~~particulate matter~~ second component of the suspension;

a metering chamber associated with the substrate, the metering chamber in fluid communication with the fluid outlet port of the separation ~~tube~~ chamber so as to receive the ~~liquid-first~~ component of the suspension that is transmitted through the outlet port;

an assay zone associated with the substrate, the assay zone in fluid communication with the metering chamber; and

a waste chamber associated with the substrate, the waste chamber in fluid communication with the metering chamber in a and configured configuration such so that the portion of the received first component that exceeds a controlled amount is delivered through the metering chamber to the waste chamber and such that when the particulate suspension including the particulate matter component and the liquid component is deposited into the antechamber, rotating the substrate in response to the encoded information delivers a metered the controlled amount of the ~~liquid-first~~ component to the

~~assay zone, while an excess amount of the liquid component is delivered to the waste chamber.~~

13. (Canceled).

14. (Currently Amended ) The optical bio-disc of claim 11 wherein the disc drive assembly includes a read beam enabled to analyze the liquid-first component in the assay zone.

15. (Currently amended) A fluidic circuit in a substrate of a bio-disc for separating and metering a liquid component of a particulate suspension from particulate matter associated therewith, the substrate and fluidic circuit comprising:

~~encoded information located on the bio-disc and in proximity to the substrate, the encoded information configured so as to be readable by a drive assembly to control rotation of the substrate;~~

an antechamber;

a separation ~~tube-chamber~~ in fluid communication with the antechamber; ~~and configured such that a first portion of the separation tube is closer to the antechamber than a second portion of the separation tube;~~

a fluid outlet port located ~~between the first and second portions of~~ on the separation ~~tube-chamber~~ at a position selected to permit outward transmission therethrough of at least a portion of the liquid component of the particulate suspension when the suspension is contained in the separation ~~tube-chamber~~ and when the substrate is rotated in response to the encoded information, while substantially preventing outward transmission therethrough of the particulate matter component of the suspension;

a metering chamber in fluid communication with the fluid outlet port of the separation ~~tube-chamber~~ so as to receive the liquid component of the suspension that is transmitted through the outlet port;

an assay zone in fluid communication with the metering chamber; and

a waste chamber in fluid communication with the metering chamber in a configuration such that the portion of the received liquid component that exceeds a controlled amount is delivered through the metering chamber to the waste chamber so that ~~when the particulate suspension including the particulate matter component and the liquid component is deposited into the antechamber and when the substrate is rotated, in~~

~~response to the encoded information, the particulate suspension is caused to flow through the separation tube and the metering chamber delivers a metered~~ the controlled amount of the liquid component to the assay zone, ~~while an excess amount of the liquid component is delivered to the waste chamber.~~

16. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes a blood sample, the particulate matter component includes at least one from the group of white blood cells and red blood cells, and the liquid component includes serum.

17. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes a urine sample, the particulate matter component includes at least one from the group of epithelial cells, casts, and bacteria, and the liquid component includes clarified urine.

18. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes an environmental water sample, the particulate matter component includes at least one from the group of dirt, biological matter, particulate contaminants, and bacteria, and the liquid component includes clarified water.

19. (Original) The fluidic circuit of claim 16 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the serum.

20. (Original) The fluidic circuit of claim 17 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the clarified urine.

21. (Original) The fluidic circuit of claim 18 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the clarified water.

22. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes a blood sample, the particulate matter component includes at least one from the group of white blood cells and red blood cells, and the liquid component includes serum.

23. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes a urine sample, the particulate matter component includes at least one from the group of epithelial cells, casts, and bacteria, and the liquid component includes clarified urine.

24. (Original) The fluidic circuit of claim 15 wherein the particulate suspension includes an environmental water sample, the particulate matter component includes at least one from the group of dirt, biological matter, and particulate contaminants, and the liquid component includes clarified water.

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25. (Original) The fluidic circuit of claim 22 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the serum.

26. (Original) The fluidic circuit of claim 23 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the clarified urine.

27. (Original) The fluidic circuit of claim 24 wherein when the disc is processed in an optical drive, a read beam is directed at the assay zone to analyze the clarified water.

28-29. (Canceled)

30. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of amniotic fluid, the ~~particulate-matter-second~~ component includes at least one from the group of sloughed cells, cell debris, cells, vernix, and bacteria, and the ~~liquid-first~~ component includes clarified amniotic fluid.

31. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of cerebrospinal fluid, the ~~particulate-matter-second~~ component includes at least one from the group of cell debris, cells, clots, and bacteria, and the ~~liquid-first~~ component includes clarified cerebrospinal fluid.

32. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of synovial fluid, the ~~particulate-matter-second~~ component includes at least one from the group of cell debris, cells, clots, and bacteria, and the ~~liquid-first~~ component includes clarified synovial fluid.

33. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of pleural fluid, the ~~particulate-matter-second~~ component includes at least one from the group of cell debris, cells, lipid, and bacteria, and the ~~liquid-first~~ component includes clarified pleural fluid.

34. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of pericardial fluid, the ~~particulate-matter-second~~ component includes at least one from the group of cell debris, cells, lipid, and bacteria, and the ~~liquid-first~~ component includes clarified pericardial fluid.

35. (Currently Amended) The optical bio-disc of claim 11 wherein the ~~particulate~~ suspension includes a sample of peritoneal fluid, the ~~particulate-matter-second~~ component

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includes at least one from the group of cell debris, cells, lipid, and bacteria, and the ~~liquid~~first component includes clarified peritoneal fluid.

36-60. (Canceled)

61. (New) An optical bio-disc as defined in Claim 11, further comprising an excess fluid outlet port connected to the metering chamber such that the portion of the first component in excess of the controlled amount is communicated out of the metering chamber.

62. (New) An optical bio-disc as defined in Claim 11, wherein the suspension comprises a particulate suspension, wherein the first component is a liquid component of the suspension, and wherein the second component is a particulate component of the suspension.

63. (New) An optical bio-disc as defined in Claim 12, wherein the suspension comprises a particulate suspension, wherein the first component is a liquid component of the suspension, and wherein the second component is a particulate component of the suspension.

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**SUMMARY OF INTERVIEW**  
**CONDUCTED OCTOBER 27, 2005**

Exhibits and/or Demonstrations

None.

Identification of Claims Discussed

Claims 11, 12 and 15.

Identification of Prior Art Discussed

U.S. Patent No. 6,063,589 to Kellogg et al.

Proposed Amendments

Amendments to Claims 11, 12 and 15 were discussed, including the transmission of fluid in excess of a controlled amount through the metering chamber and outward therefrom, so that the controlled amount of fluid may then be transferred to the analysis chamber.

Principal Arguments and Other Matters

Applicant submitted that the proposed amendments, in combination with other features of the independent claims, distinguish over the prior art of record.

Results of Interview

The Examiner agreed that the independent claims including the proposed amendments would distinguish over at least the embodiments illustrated in Figures 8 and 9A-H of the Kellogg reference. The Examiner indicated that he would need to conduct further review of the art after submission of the response to the Office Action.